Hungry Mother Lake
2007

Hungry Mother Lake is a 108-acre reservoir located within Hungry Mother State Park in Smyth County, Virginia. The reservoir has a maximum depth of 32 feet and an average depth of 16 feet. Six miles of shoreline offer a variety of habitats ranging from gentle sloping clay banks to rock bluffs. The water is moderately clear, with visibility ranging from less than three feet in spring to over 10 feet during the summer.

In a typical year the lake is covered with ice from late December through January. Surface water temperatures climb into the 40's during February and the 50's during March. The lake stratifies into several different temperature layers during the summer. A maximum annual surface temperature of about 80 degrees is reached in July or August. During the months of July and August there is not enough dissolved oxygen to support fish life at depths greater than 15 feet. Fall turnover begins in September, and by early December the lake is the same temperature (40's) from top to bottom.

The lake supports self-sustaining populations of largemouth, smallmouth, spotted bass, bluegill, black crappie, rock bass, and common carp. Walleye, musky and channel catfish populations are maintained with periodic fingerling stockings. Grass carp are occasionally stocked to control vegetation. Alewives provide the primary forage for most sport fish in the lake.

Hungry Mother Lake is managed to provide a diversity of sport fishing opportunities. Routine management activities include fish population sampling, fish habitat enhancement and sport fish stocking.

Biologists sample the fish populations in Hungry Mother Lake using an electrofishing boat. This boat delivers a controlled field of electric current into the water. As the boat moves slowly along the shoreline, fish within the current field (approximately 12 feet wide by eight feet deep) are temporarily stunned and can be dipped with a long-handled net. After the fish are removed from the current field they quickly recover and can be released unharmed.

Two types of fish population samples are collected at Hungry Mother Lake. Each year in May the general fish community is sampled. Biologists collect all species of fish and weigh and measure individuals. This sample provides a good annual "check up" for bass, sunfish, and crappie populations. The second type of sampling is targeted toward collecting walleye data. Because walleye prefer cooler water temperatures than bass or sunfish, the May sample doesn't provide a representative measure of walleye abundance in the lake. Sampling in March, April and October provides much better information about the walleye population.

Fish population samples provide lots of information to the biologist, but the relative abundance of a fish species and the size structure of the population are two of the most

important pieces of data. By looking at the relative abundance of a particular species through time, you can determine if a population is stable, increasing or decreasing in abundance. By looking at the size structure of a fish population, you can get a general picture of the sizes of fish present in the fishery.

Black bass populations are doing quite well in Hungry Mother Lake. Largemouth are the dominant bass species and spotted bass, in some years, are a close second. There are not very many smallmouths in Hungry Mother Lake, but there are some large ones in the 18 to 20-inch ranges. Black bass relative abundance (number of fish collected per hour of sampling) varies from year to year, but the five-year-average total catch rate (all black bass species) of 77 fish per hour is very good for lakes in Southwest Virginia (Figure 1). In May of 2006, a night sample was collected for comparison. The number of bass collected per hour of night sampling was not substantially different than day sampling.

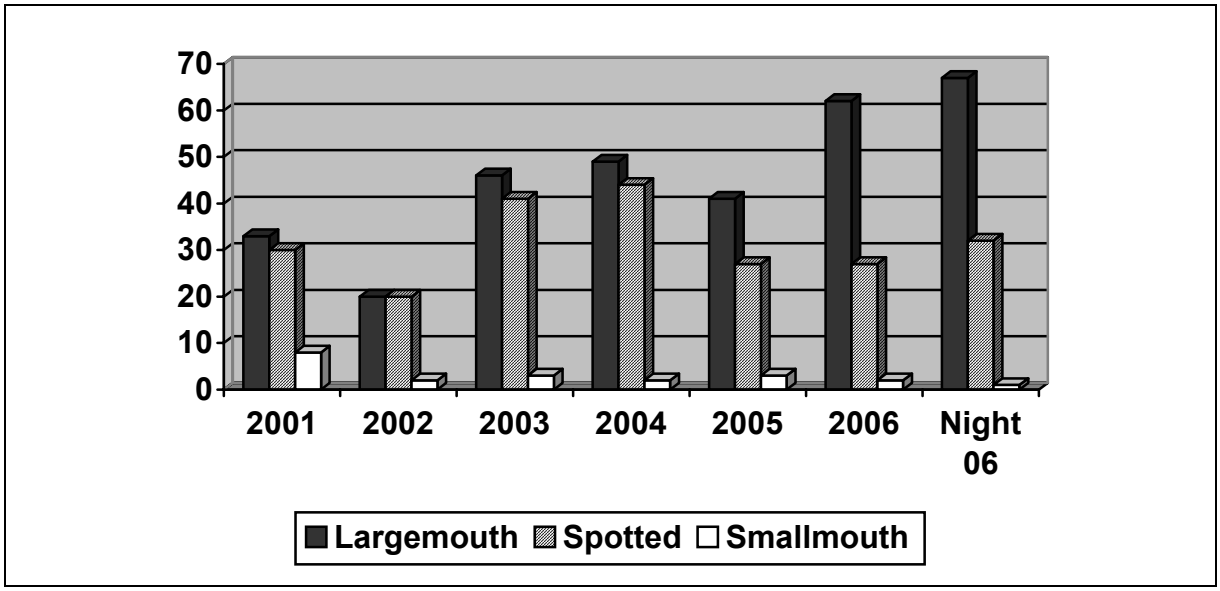

Figure 1. The number of bass collected per hour of electrofishing at Hungry Mother Lake 2001 – 2006. Data from a night sample in May 2006 are included for comparison.

The size structures of the bass populations are decent. Fifteen to twenty percent of the largemouths exceed the preferred size of 15 inches. About 15 percent of spotted bass are longer than the preferred size of 14 inches. These numbers describe the overall population; there are some larger fish present for the lucky or skillful angler to pursue.

Black crappie abundance has varied in recent years, but was around 60 per hour the last couple of years (Figure 2). Size structure of black crappie was decent in 2006, with about 10 percent of the adult population over ten inches in length and five percent longer than 12 inches.

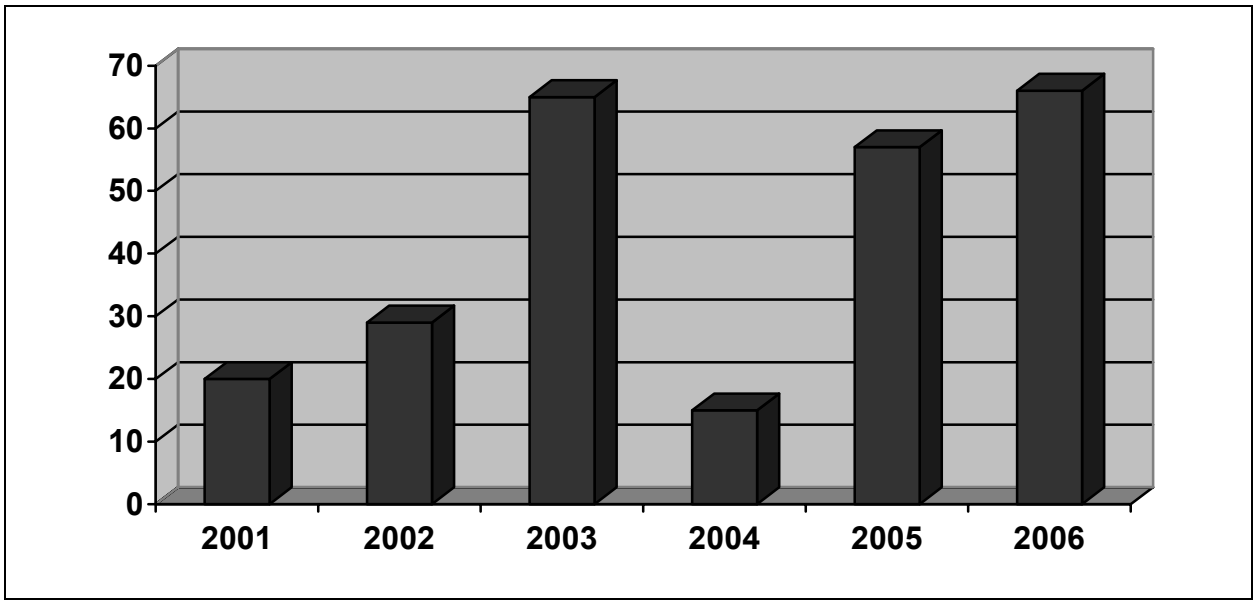

Figure 2. Number of black crappie collected per hour of electrofishing at Hungry Mother Lake from 2001– 2006.

The sunfish population at Hungry Mother Lake is dominated by bluegills. The bluegill population is increasing in abundance, and the size structure is about average for small impoundments in Southwest Virginia. This scenario is much better than in the past when the bluegill population was overabundant and stunted at small sizes.

The walleye population in Hungry Mother Lake is in good shape. From 2001 to 2003, the relative abundance was stable at about five fish per hour of sampling (Figure 3). The catch rate jumped to 19 per hour in 2004, and was about 14 per hour in 2005 and 2006. The May 2006 night sample yielded a much higher catch rate of 35 fish per hour. The nighttime sampling data support the notion that more walleyes move into the shallow areas along the shoreline at night. The size structure of the walleye population is good. Most of the walleyes collected each year range from16 to 20 inches, with a few fish up to 24 inches.

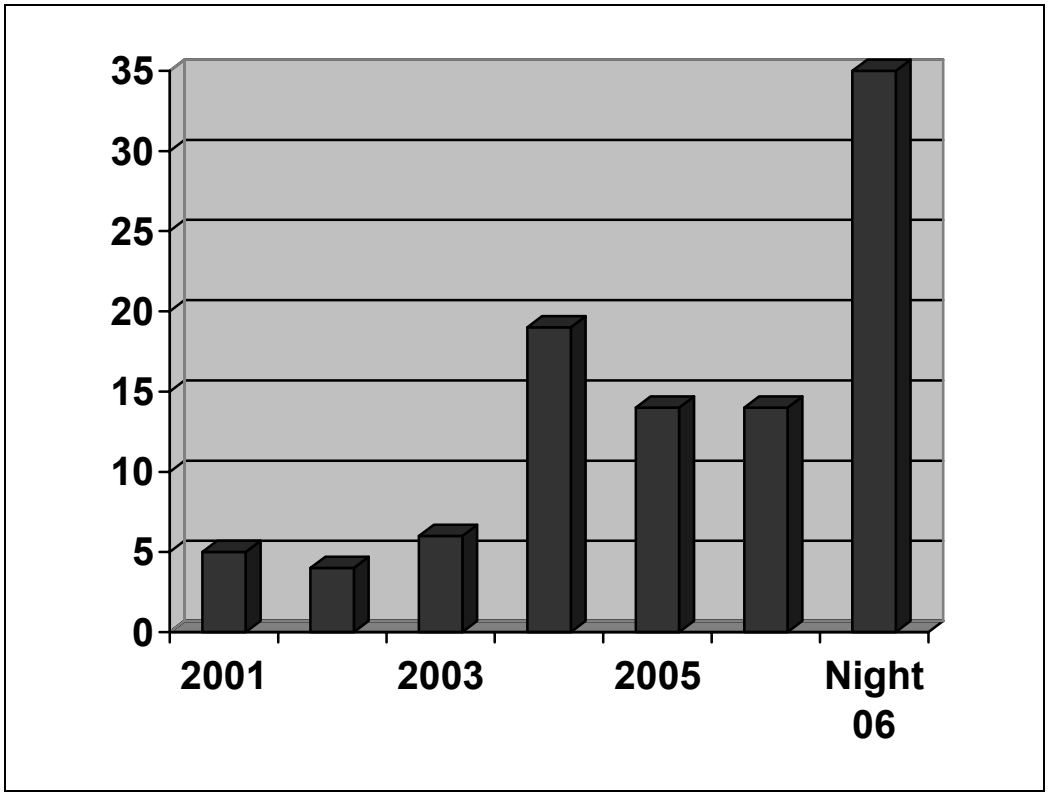

Figure 3. Number of walleyes collected per hour of electrofishing at Hungry Mother Lake 2001-2006. Data from a night sample in May 2006 are included for comparison.

The number of channel catfish collected per hour of electrofishing increased substantially from 2002 to 2006 (Figure 4.) Increased abundance of channel catfish can likely be attributed to changes in the stocking protocol. Beginning with the fall 2002 stocking, larger channel catfish (average size =10 inches) were stocked. These larger catfish survived and increased the fishable population.

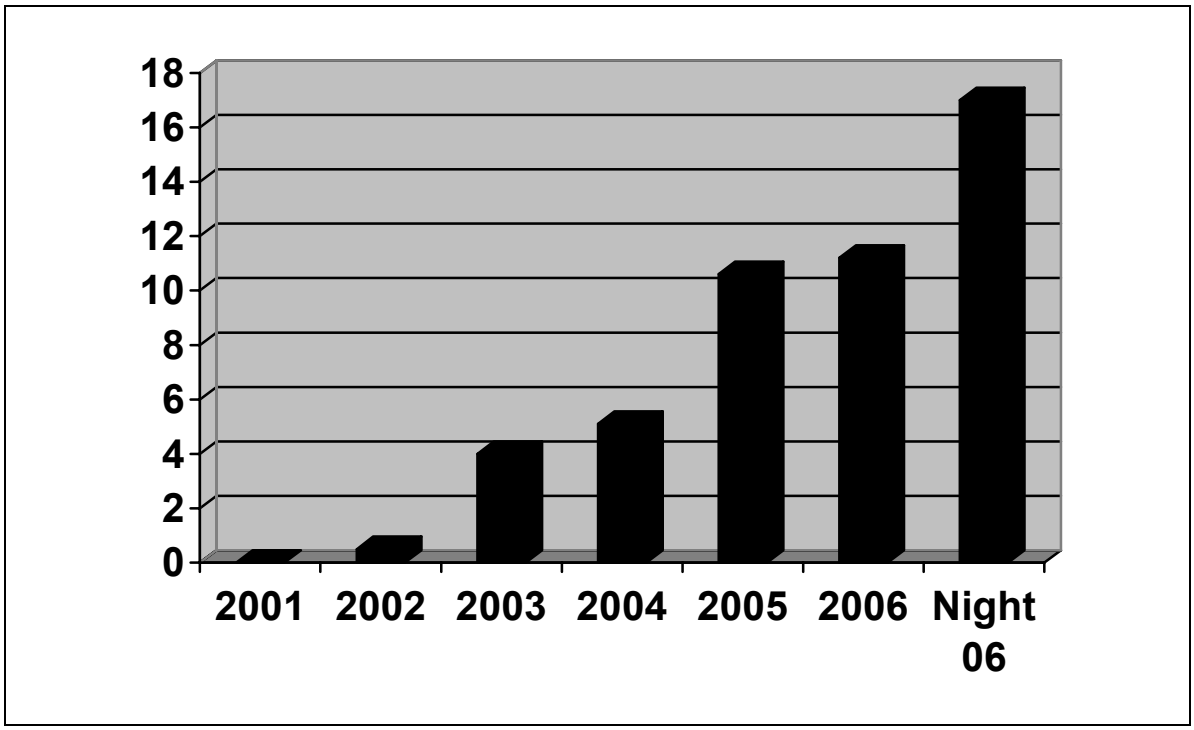

Figure 4. Number of channel catfish collected per hour of electrofishing at Hungry Mother Lake 2001-2006. Data from a night sample in May 2006 are included for comparison.

Several other species of fish including musky, common carp, grass carp, rock bass, hybrid sunfish and alewives were collected. However, the low number of fish collected does not provide enough data to make meaningful comments about the status of these fish populations.

Routine fish stocking maintains populations of walleye, musky and channel catfish, because these species do not have suitable habitat to reproduce naturally. Current stocking levels are 10,800 walleyes, 1,080 channel catfish and 54 muskies per year.

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